

REMARKS

Claims 28-38, 40 and 42-46 are pending in the application.

Claims 28-38, 40 and 42-46 are rejected.

Claims 28-38, 40 and 42 are rejected under 35 U.S.C. 112, second paragraph.

Claims 28-34, 36-38, 40 and 42 are rejected under 35 U.S.C. 103(a) on the basis of Parker *et al.* in view of Smith.

Claim 35 is rejected under 35 U.S.C. 103(a) on the basis of Parker *et al.* in view of Smith and further in view of Sota *et al.*

The undersigned attorney for applicant appreciates the telephone interview conducted with Examiner Nadav on May 22, 2007. The rejection in view of Parker and Smith was discussed, but no agreement was reached.

Applicant has amended the claims remaining in the application to indicate that each recited "solder ball pad" is a "printed circuit solder ball pad." This addresses the indefiniteness concern raised by the Examiner. Similarly, each recited "bond finger" is now referred to as a "printed circuit bond finger." Applicant believes that these amendments address and overcome the Section 112 rejection.

Applicant respectfully traverses the rejection of the claims on the basis of on the basis of Parker *et al.* in view of Smith. As applicant understands the rejection, Parker *et al.* discloses a plurality of bond pads (on the semiconductor die), printed circuit solder ball pads, printed circuit patterns, and printed circuit bond fingers. The Examiner considers different ones of the printed circuit solder ball pads to be the first and second printed circuit solder ball pads. And, similarly, different ones of the printed circuit patterns are considered to be the first and second printed circuit patterns while different ones of the printed circuit bond fingers are considered to be the first, second, and third printed circuit bond fingers.

Smith discloses an electrical connection between a pair of conductive pads 36. If the electrical connection of Smith were applied between two of the printed circuit bond fingers of Parker *et al.*, according to the Examiner, all of the claim limitations are met. Even though applicant disputes this, if we assume for the sake of argument that it is true, a serious flaw remains in this rejection: applying the wire bond as suggested by the Examiner merely shorts together two of the bond pads 106 in Parker. Because Parker is a conventional package, the result of applying a wire bond between any two bond pads 106 will be to short different parts of the

integrated circuit together. There is consequently no motivation to combine the references as suggested by the Examiner. What's more, any person skilled in the art would know not to short together bond pads. As a result, this teaches away from combining as suggested by the Examiner.

Applicant's claimed invention describes a first type of connection between a solder ball pad and a chip bond pad in the following order: printed circuit solder ball pad—printed circuit pattern—printed circuit bond finger—wire bond—chip bond pad. It also includes a second type of connection in this order: printed circuit solder ball pad—printed circuit pattern—(second) printed circuit bond finger—wire bond—(third) printed circuit bond finger—wire bond—chip bond pad. This feature permits, among other things, changing the semiconductor chip design without having to redesign the package substrate and without adding micro-via holes to the substrate. This can be seen in Fig. 5 where a bond pad 202 added in a chip redesign is incorporated into the second type of connection just described.

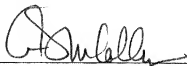
Neither Parker *et al.* nor Smith address this problem nor does either suggest that shorting two of the Parker *et al.* bond pads together would do anything other than destroy or otherwise impair operation of the Parker *et al.* integrated circuit.

Even so, applicant has amended claim 28 to further define the invention. First, the limitations of claims 29-31 are now incorporated into claim 28. In other words, the claim is now limited to no printed circuit pattern being directly connected to the third printed circuit bond finger. It is further limited to no wire bond directly connected between the second printed circuit bond finger and any of the bond pads. A further amendment limits the second printed circuit bond finger to having no direct connections to any structure other than the second printed circuit solder ball pad and the third printed circuit bond finger. These features are not suggested in Parker *et al.* or Smith either individually or combined. These further claim limitations define structure that facilitates electrically connecting an added bond pad on a redesigned semiconductor device to an added printed circuit solder ball pad—even when it is not possible to directly connect the added printed circuit solder ball pad to a printed circuit bond finger adjacent the added bond pad. These limitations are not even hinted at in Parker *et al.* or Smith.

For the foregoing reasons, reconsideration and allowance of the pending claims as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.

A handwritten signature in dark ink, appearing to read 'Alan T. McCollom', is written over a horizontal line.

Alan T. McCollom
Reg. No. 28,881

MARGER JOHNSON & McCOLLOM, P.C.
210 SW Morrison Street, Suite 400
Portland, OR 97204
503-222-3613

Customer No. 20575